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UNION CARBIDE CORP					
Contractor					
BUSHY RUN RES CTR					
Document Title					
INITIAL SUBMISSION: PRIMARY SKIN IRRITANCY STUDIES OF N,N-DIMETHYLETHANOLAMINE IN RABBITS WITH COVER LETTER DATED 060492					
Chemical Category					
N,N-DIMETHYLETHANOLAMINE					

8(e)

4873

CAP

(COMPLIANCE AUDIT PROGRAM)

TSCA CONFIDENTIAL BUSINESS INFORMATION

ORIGINAL - DCO (Jeff/Eric)
COPY # 1 - CBIC
COPY # 2 - Scott Sherlock

COMPANY SANITIZED

ORIGINAL - PINS
COPY # 1 - PINS
COPY # 2 - ECAD

CONTAINS NO CBI

ORIGINAL - PINS
COPY # 1 - PINS
COPY # 2 - ECAD (Dave Williams)



CONTAINS NO CBT

UNION CARBIDE CORPORATION

39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001

June 4, 1992

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U.S. Environmental Protection Agency
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Washington, DC 20460



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92 JUN 15 PM 1:24

Attn: Section 8(e) Coordinator (CAP Agreement)

Re: CAP Agreement Identification No. 8ECAP-0110

Dear Sir or Madam:

Union Carbide Corporation ("Union Carbide") herewith submits the following report pursuant to the terms of the TSCA §8(e) Compliance Audit Program and Union Carbide's CAP Agreement dated August 14, 1991 (8ECAP-0110). This report describes acute toxicology studies with N,N-dimethylethanolamine (CASRN 108-01-0).

"N,N-Dimethylethanolamine: Primary Skin Irritancy Studies in the Rabbit",
Bushy Run Research Center, Project Report 53-23, April 6, 1990.

A complete summary of this report is attached.

Previous TSCA Section 8(e) or "FYI" Submission(s) related to this substance are:

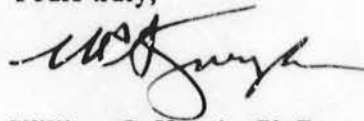
(None)

Previous PMN submissions related to this substance are: (None)

This information is submitted in light of EPA's current guidance. Union Carbide does not necessarily agree that this information reasonably supports the conclusion that the subject chemical presents a substantial risk of injury to health or the environment.

In the attached report the term "CONFIDENTIAL" may appear. This precautionary statement was for internal use at the time of issuance of the report. Confidentiality is hereby waived for purposes of the needs of the Agency in assessing health and safety information. The Agency is advised, however, that the publication rights to the contained information are the property of Union Carbide.

Yours truly,



William C. Kuryla, Ph.D.
Associate Director
Product Safety
(203/794-5230)

WCK/cr

Attachment (3 copies of cover letter, summary, and report)

SUMMARY

Project Report 53-23

N,N-Dimethylethanolamine

Primary Skin Irritancy Studies in the Rabbit

Sponsor: Specialty Chemicals Division
Union Carbide Corporation

SUMMARY

In previous skin irritancy tests at BRRC, N,N-dimethylethanolamine produced necrosis from 4 hours of occluded contact with 0.5 ml. Therefore, further testing, using 2 periods of occluded contact (one hour, 3 minutes) was conducted.

Skin Irritation, Rabbit (occluded)

One-hour contact: Moderate erythema and edema on 6 of 6 rabbits, full-thickness necrosis on 6, ulceration on 3, ecchymosis on one and scabs on 3 from 0.5 ml; severe irritation persisted through 2 days, at which time all animals were sacrificed for humane reasons.

Three-minute contact: Minor erythema, superficial necrosis and ecchymosis on one of 6 rabbits; desquamation, alopecia and scabs on 2 from 0.5 ml (no irritation observed on 4 animals); desquamation, alopecia and scabs persisted on the 2 affected animals at 14 days.



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Project Report 53-23
BRRC Number 90-15-11184
5 Pages
April 6, 1990

N,N-Dimethylethanolamine

Primary Skin Irritancy Studies in the Rabbit

Sponsor: Specialty Chemicals Division
Union Carbide Corporation

SUMMARY

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Three-minute contact: Minor erythema, superficial necrosis and ecchymosis on one of 6 rabbits; desquamation, alopecia and scabs on 2 from 0.5 ml (no irritation observed on 4 animals); desquamation, alopecia and scabs persisted on the 2 affected animals at 14 days.

INTERPRETATION

A one-hour application of N,N-dimethylethanolamine to covered rabbit skin resulted in severe irritation, including full-thickness necrosis on 6 of 6 rabbits and ulceration on 3. A 3-minute application of 0.5 ml produced minor to moderate irritation on 2 of 6 animals tested, with superficial (reversible) necrosis on one. Therefore, N,N-dimethylethanolamine was "corrosive" to the skin when tested for one hour but not in the 3-minute test.

SAMPLE

Quantity: Approximately 30 ml

Submitted By: R. A. Gregory
(Bound Brook, NJ)

Date Received: December 15, 1989

Division: Specialty Chemicals
South Charleston, WV

Identification: TK-200; PC-2911602

UCC Charge No.: 500-566-496500

Description: transparent,
colorless, low viscosity liquid

BRRC Sample No.: 52-781

CAS No.: 108-01-0

Any of the remaining sample will be retained for at least 2 years following issuance of this report.

PROCEDURES

A description of the test procedure is included in the attached standard test procedures section (Appendix 1). One set of 6 rabbits was subjected to a one-hour contact period and a second set of 6 animals was tested for 3 minutes. The sample was dosed as received for the primary skin irritancy tests.

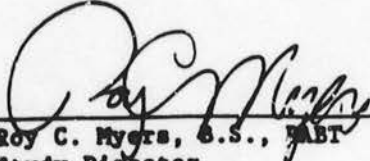
RESULTS

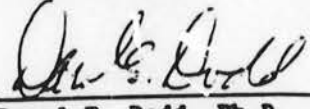
Results of the one-hour skin irritation test are given in Table 1 and the 3-minute contact results appear in Table 2.

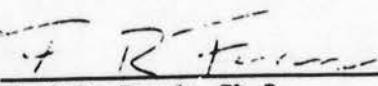
A one-hour application of 0.5 ml of N,N-dimethylethanolamine to occluded rabbit skin resulted in moderate erythema and edema on all 6 rabbits. One rabbit had ecchymosis within one hour (after the end of contact). Superficial necrosis was present on 4 rabbits at one hour. Full-thickness necrosis developed on all 6 animals and ulceration developed on 3 within one to 2 days. Scabs were also present on 3 animals at 2 days. At this time, severe irritation persisted on each animal. Therefore, all rabbits were sacrificed for humane reasons.

Following a 3-minute contact period with 0.5 ml of sample on covered skin, minor erythema was produced on one of 6 rabbits (persisting through 3 days). Ecchymosis was apparent on another animal at one hour. Four rabbits had no irritation during the test (2 animals were sacrificed at 7 days). The first affected rabbit developed superficial necrosis by one day. Desquamation, scabs and alopecia were observed on 2 rabbits between 7 and 14 days.

Reviewed and Approved by:

 4-5-90
Roy C. Myers, S.S., DABT
Study Director Date

 4/6/90
Darol E. Dodd, Ph.D., DABT
Assistant Director Date

 4-5-90
Fred E. Frank, Ph.D.
Director Date

Acknowledgments:

Skin Irritation Tests

Kathleen R. Hufford, AALAS Cert. II
Senior Technologist

Mary G. Brawley, HT (ASCP)
Master Technologist

WPC/11f/18292-1
03-14-90

Table 1

Primary Skin Irritation - Rabbit (One-Hour Contact)

Material: N,N-Dimethyl ethanolamineSample No.: 52-781Conditions: 0.5 ml dosed

Date:	02-06-90	02-06-90	02-06-90	02-06-90	02-06-90	02-06-90
Rabbit No.:	90-3007	90-3009	90-3011	90-1407	90-1411	90-3033
Sex:	Male	Male	Male	Female	Female	Female

Erythema & Eschar Formation

Time (After Initiation of Contact):	Score	Score	Score	Score	Score	Score	Mean Score
2 hours	2	2	2	1	1	1	1.5
1 day	2	2	2	2	3	3	2.3
2 days	2	2	2	2	2	2	2.0

Edema Formation

Time:	Score	Score	Score	Score	Score	Score	Mean Score
2 hours	1	1	2	1	1	1	1.2
1 day	2	2	3	2	3	3	2.5
2 days	2	2	2	2	2	2	2.0

Other Irritation or Effects

Time:	Effect	Effect	Effect	Effect	Effect	Effect
2 hours	N	N	N	None	N	EC
1 day	N	N+,U	N	N+,U	N+	N+
2 days	N+,U,S	N+,U,S	N+	N+,U,S	N+	N+

Specific Effects/Remarks: Rabbits sacrificed at 2 days for humane reasons.

N = superficial necrosis; N+ = full-thickness necrosis; EC = ecchymosis; S = scab formation; U = ulceration

Table 2
Primary Skin Irritation - Rabbit (3-minute Contact)

Material: N,N-Dimethylethanolamine

Sample No.: 52-781

Conditions: 0.5 ml dosed

Date:	01-22-90	01-22-90	02-13-90	02-13-90	02-13-90	02-13-90
Rabbit No.:	90-48	90-88	90-3915	90-3918	90-3950	90-3651
Sex:	Male	Female	Male	Male	Female	Female

Erythema & Eschar Formation

Time (After Initiation of Contact):	Score	Score	Score	Score	Score	Score	Mean Score
1 hour	0	0	1	0	0	0	0.2
1 day	0	0	1	0	0	0	0.2
2 days	0	0	1	0	0	0	0.2
3 days	0	0	1	0	0	0	0.2
7 days	0	0	0	0	0	0	0.0
10 days	-	-	0	0	0	0	0.0
14 days	-	-	0	0	0	0	0.0

Edema Formation

Time:	Score	Score	Score	Score	Score	Score	Mean Score
1 hour	0	0	0	0	0	0	0.0
1 day	0	0	0	0	0	0	0.0
2 days	0	0	0	0	0	0	0.0
3 days	0	0	0	0	0	0	0.0
7 days	0	0	0	0	0	0	0.0
10 days	-	-	0	0	0	0	0.0
14 days	-	-	0	0	0	0	0.0

Other Irritation or Effects

Time:	Effect	Effect	Effect	Effect	Effect	Effect
1 hour	None	None	None	None	None	EC
1 day	None	None	N	None	None	None
2 days	None	None	N	None	None	None
3 days	None	None	N	None	None	None
7 days	None	None	N,D	None	None	S
10 days	-	-	D,AL,S	None	None	S
14 days	-	-	D,AL,S	None	None	D,AL,S

Specific Effects/Remarks: Rabbits 48 and 88 sacrificed after 7 days because of housing limitations.

D = desquamation; N = superficial necrosis; EC = ecchymosis; S = scab formation; AL = alopecia

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